
WILD IN THE PARK
Creativity Camps
Make a Cardboard Record Player
ALEXANDRA PALACE
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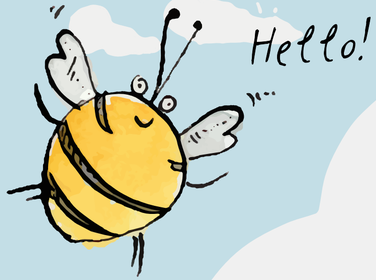
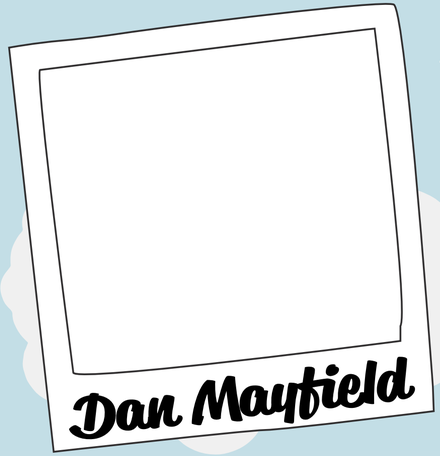


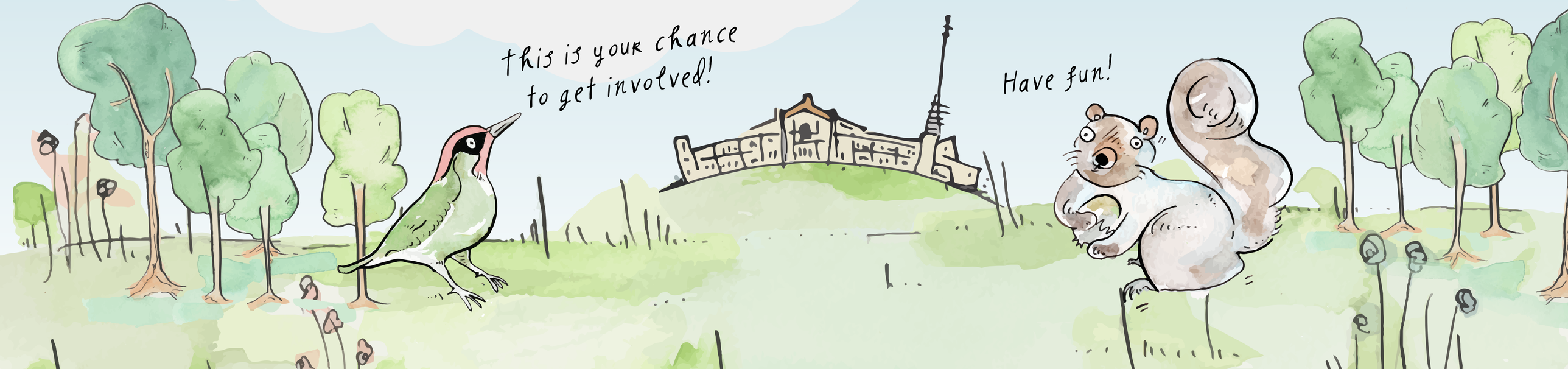
Introduction

Welcome to Creativity Camps ONLINE!

There's plenty to keep young people busy this half term, even in lockdown. Learn new skills from our inspiring roster of artists from the fields of experimental music, set design and fine art.



Dan Mayfield (Head of School of Noise) is a multi-instrumentalist, composer, sound artist and author. The School of Noise runs workshops for children, young people and adults encouraging the exploration of music and the science of sound. Dan has also published a children's book called Jasper and the Magpie.



Cardboard Record Player

Welcome to the School of Noise's guide to record players.
In this activity you'll learn about the history of record players, how they work, and most importantly how to make one using a piece of card!

Let's see how it's done.

Watch this video before you start.

A potted history of the Record player

1875

French inventor **Edouard-Leon Scott** built the **phonautograph**, the first machine that could record sound, however it didn't have the ability to play back the sounds.

1877

Thomas Edison invented the **phonograph** which recorded sounds onto cylinders that were wrapped in tinfoil. The user turned a handle to rotate the cylinder, and a stylus (needle) was placed on the foil. Vibrations from the air were sent to the stylus which made tiny indentations in the foil. Unlike the phonautograph, Edison's machine could also play back the sounds it had recorded. The first recording was of Edison reciting the nursery rhyme ***Mary Had a Little Lamb.***

1886

Alexander Graham Bell patented the **graphophone**. This machine recorded sound onto wax cylinders instead of tin foil and could be turn automatically rather than having to turn it manually.

1887

Emile Berliner invented the **gramophone**. Instead of using wax cylinders, sounds were recorded onto flat circular discs. The discs were originally made from glass, then zinc, and eventually plastic. Berliner also devised a method for mass producing the discs which made the recordings affordable to buy.

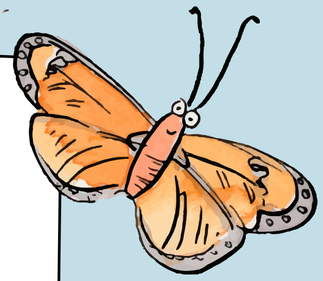
1960

Gramophones became more widely known as record players and played discs called vinyl records. Although technology has highly improved the sound quality, the basic idea of having a stylus sit inside a groove on a spinning disc has remained exactly the same to this day.

Now let's find out how a cardboard record player works...

How does it work?

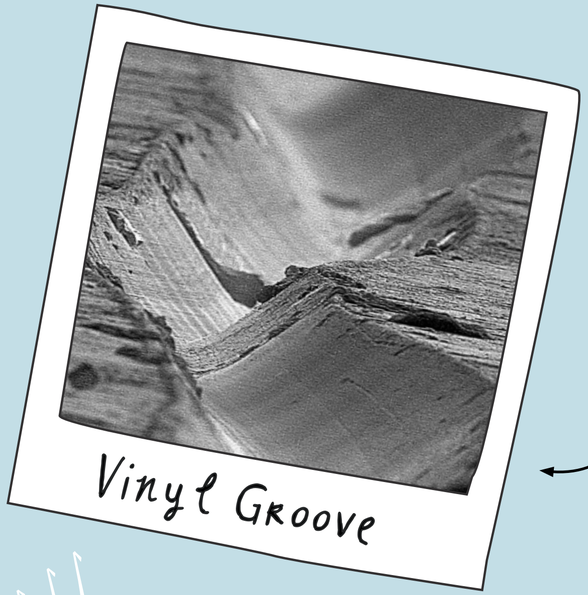
Do you have a record player at home?!



The cardboard record player works in a similar way to early gramophones. Look closely at a record and you'll see it has one continuous line cut into it. The line starts on the outside and spirals inwards towards the middle. This line is called the groove and it is where the stylus / needle sits.

As a record spins, the microscopic ridges in the groove make the needle vibrate up and down and left and right. The ridges cause the needle to vibrate which then makes the cardboard vibrate.

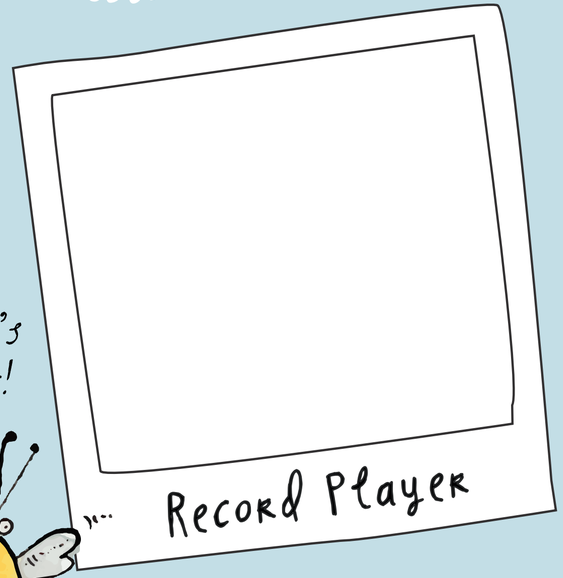
As the cardboard moves is forces the air around it to move forwards and backwards as a sound wave. Our ears detect the air moving and converts the vibrations into an electrical signal that our brains hear as sound.



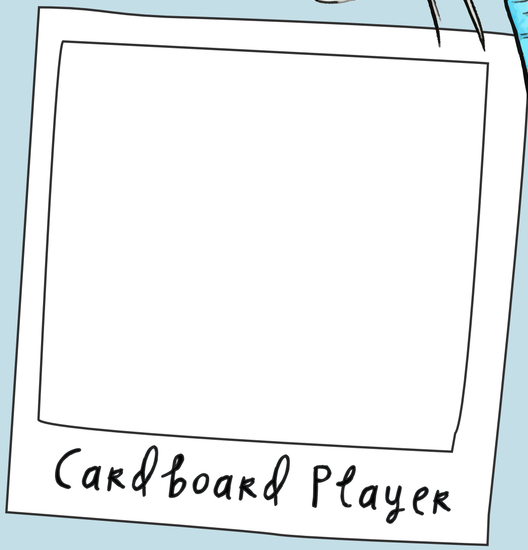
Vinyl Groove

This is a microscopic image magnifying a record to show us what the groove looks like.

Groovy! Let's get started...



Record Player



Cardboard Player

That's Magic!

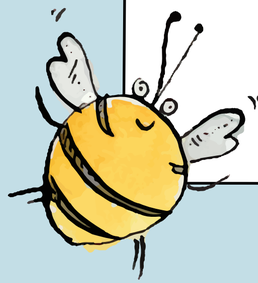
Activity time

Place your card in the printer and print off the template on the next page. Follow steps 1-7 then place the needle on the record and turn it clockwise.

You will need

- A4 card & Printer
- 2 pence coin
- Sticky tape
- Paper fastener / split pin
- Sewing needle
(be careful when handling the needle)
- Old 7" Record
(the needle will scratch and damage it)

Use recycled card if you can!



Good luck!

Take your time!

Trouble shooting

Some records will work better than others. This can be due to a number of reasons such as the initial quality of the recording, how damaged the vinyl is already, or how loud or quiet the recording is.

Try different records to find one that works well. More percussive tracks usually work better. Don't turn it too fast. Ideally they should spin 45 times a minute. This is impossible to do exactly with just your finger, but you can try!

A.

B.

C.

D.

E.

TWOPENCE

Step by Step

Step 1

Fold the top left edge of the page so that it lines up with the dotted line A.

Step 2

Keep step 1 folded. Now fold the top left edge of the page to line up with the second dotted line B.

Step 3

Keep steps 1 & 2 folded. Now fold the top left edge of the page to line up with the third dotted line C.

Step 4

Fold the top left edge of the page so that it lines up with the dotted line A.

Step 5

Unfold the card and line up the top left edge of the card with the solid line E. Place the needle on the piece of card covering the picture of the pin then tape it down.

Step 6

Place a 7" record on the card and line up the hole in the middle of the record with the dot below. Pierce through the hole with the split pin. Turn over the card and open up the split pin to secure the record in place.

Step 7

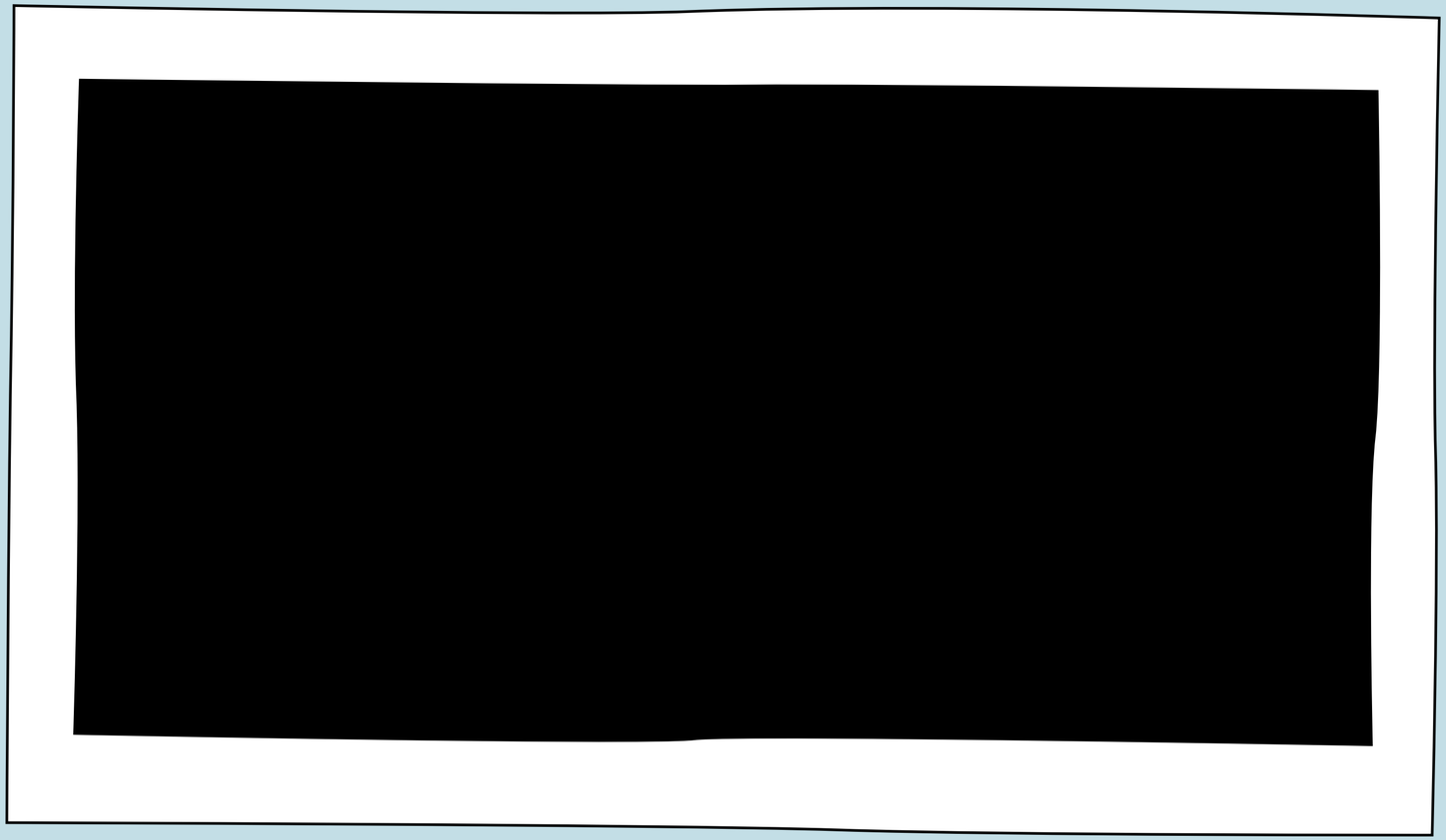
Place the 2p on the folded piece of card and tape it down next to the needle.

To Play

Place the needle on the record player and slowly turn the record clockwise.

Give your records a spin

Now you are ready to amaze your friends and family with your record player made with just card.



Creativity Camps

Check out our website for more

Thank you for taking part.

We always love to see your work, please send pictures to learning@alexandrapalace.com

See you next time

Record Player

Shadow Puppets

Drawing like Van Gogh